

FIG. 1A

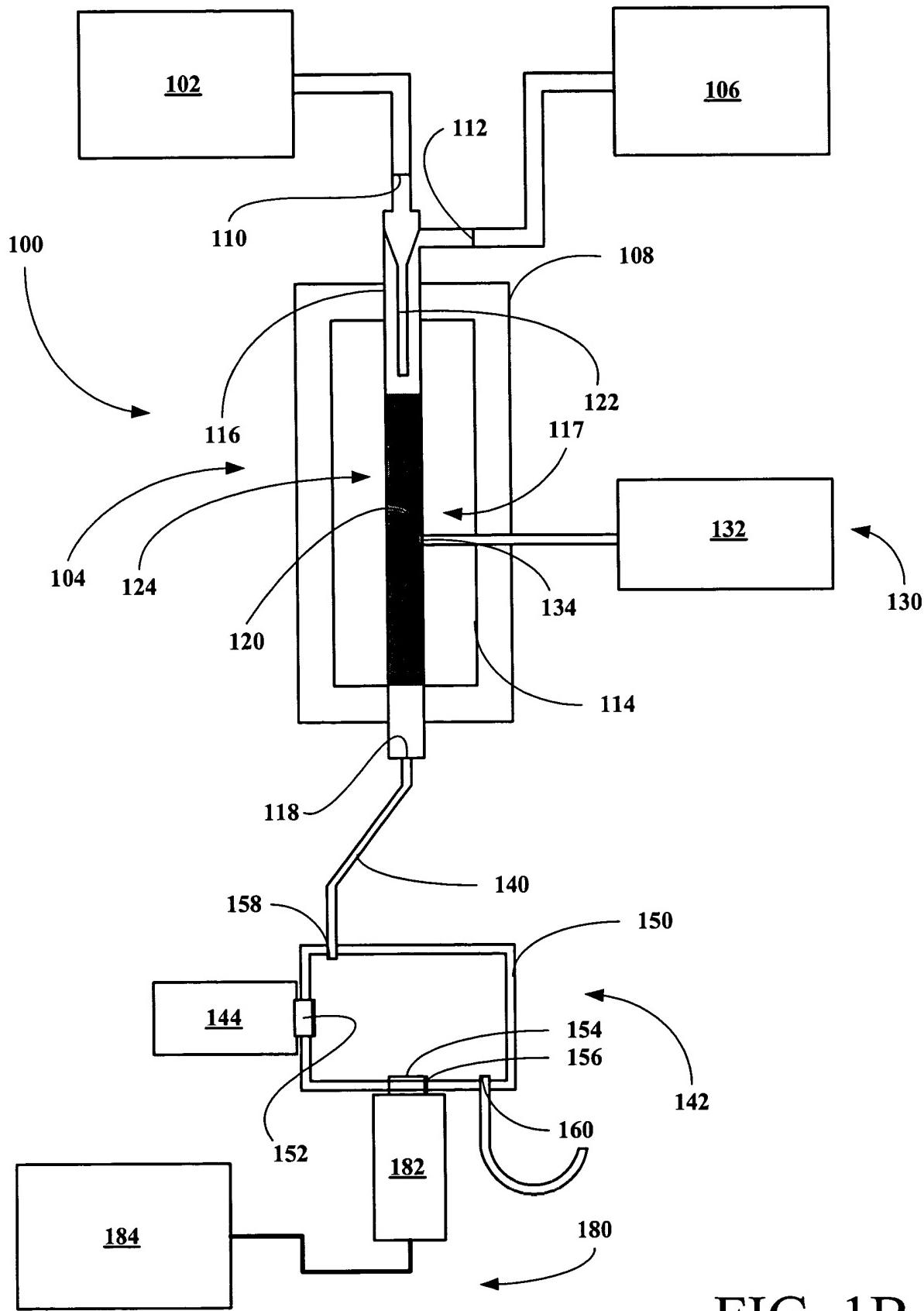


FIG. 1B

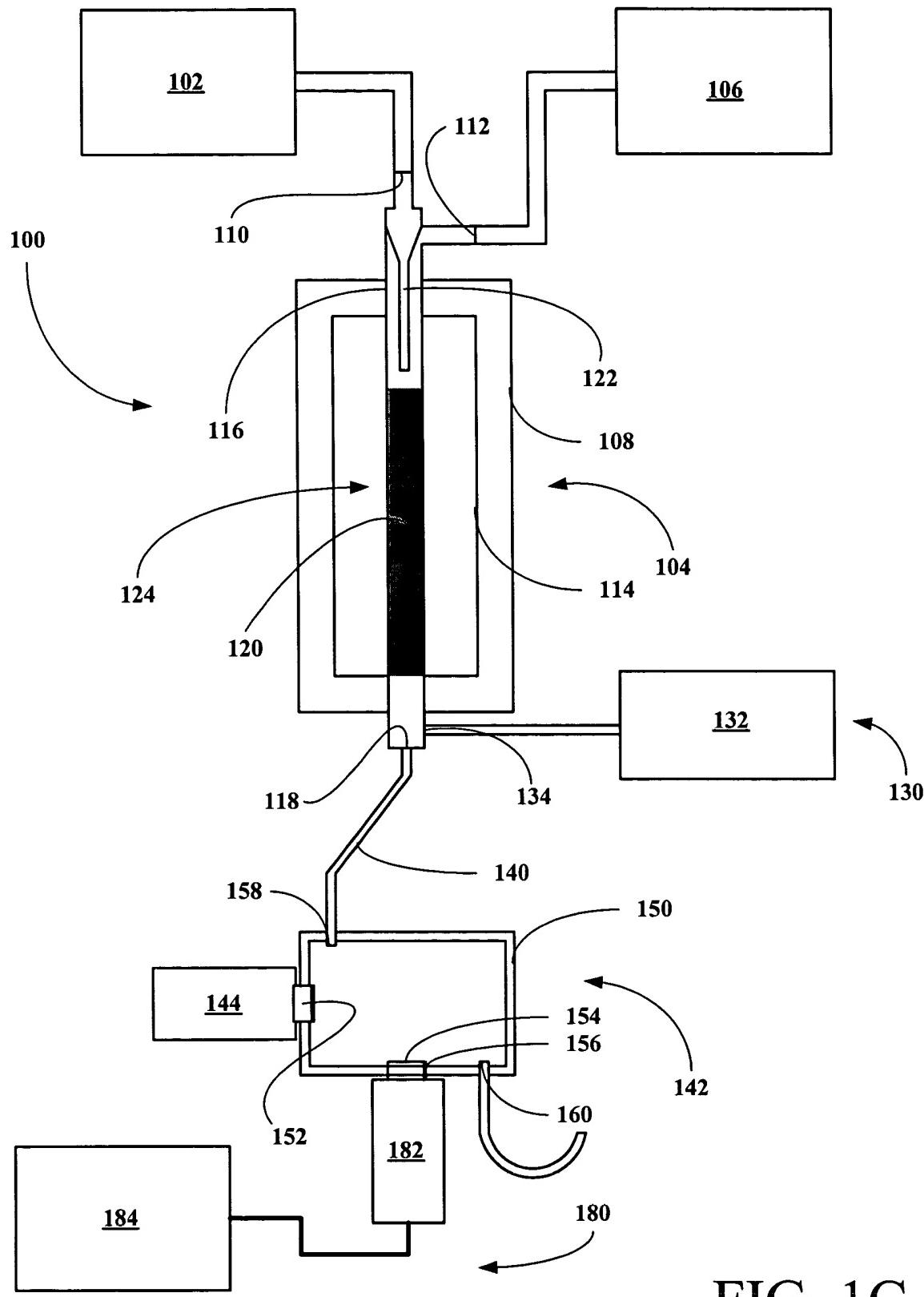


FIG. 1C

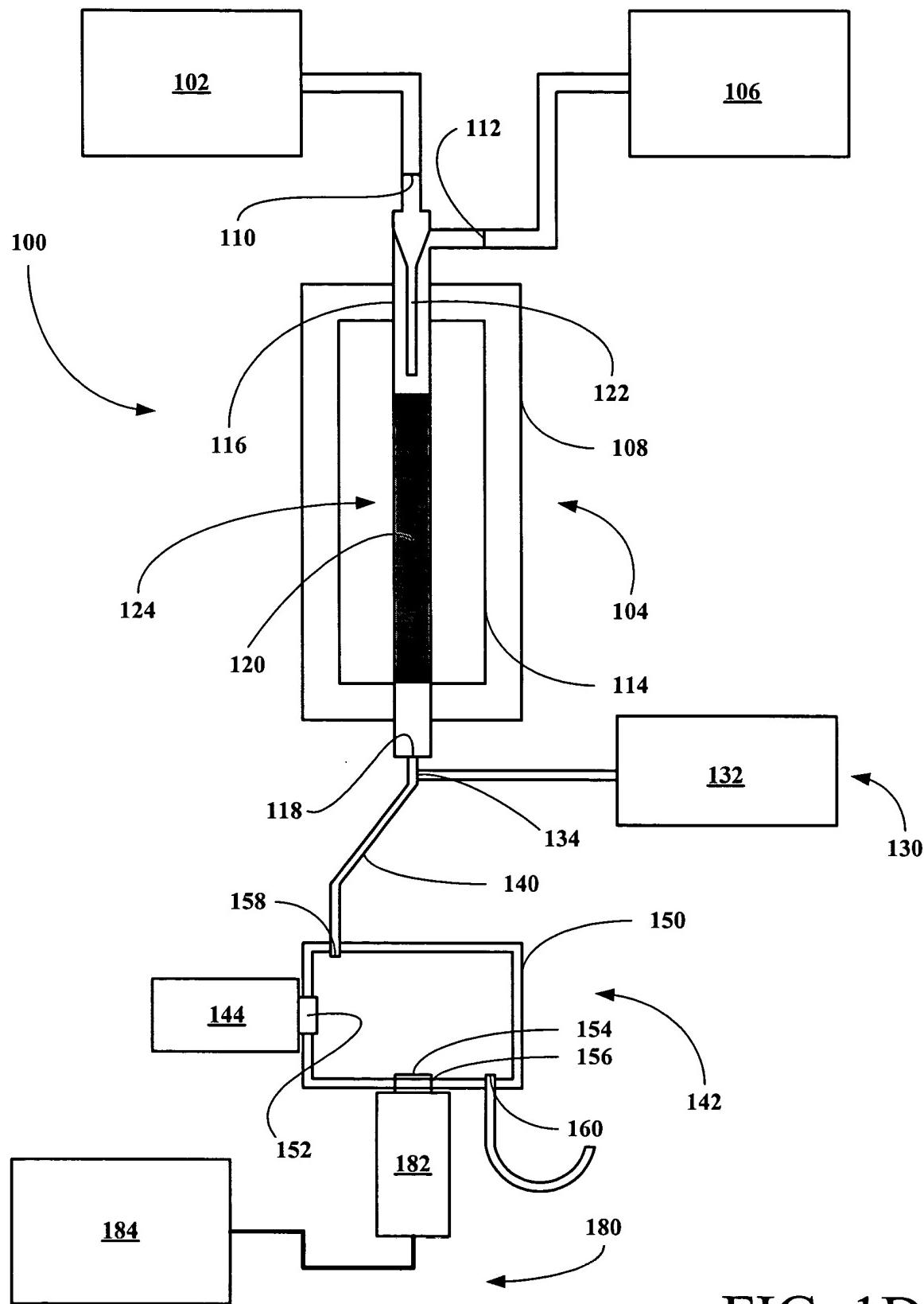


FIG. 1D

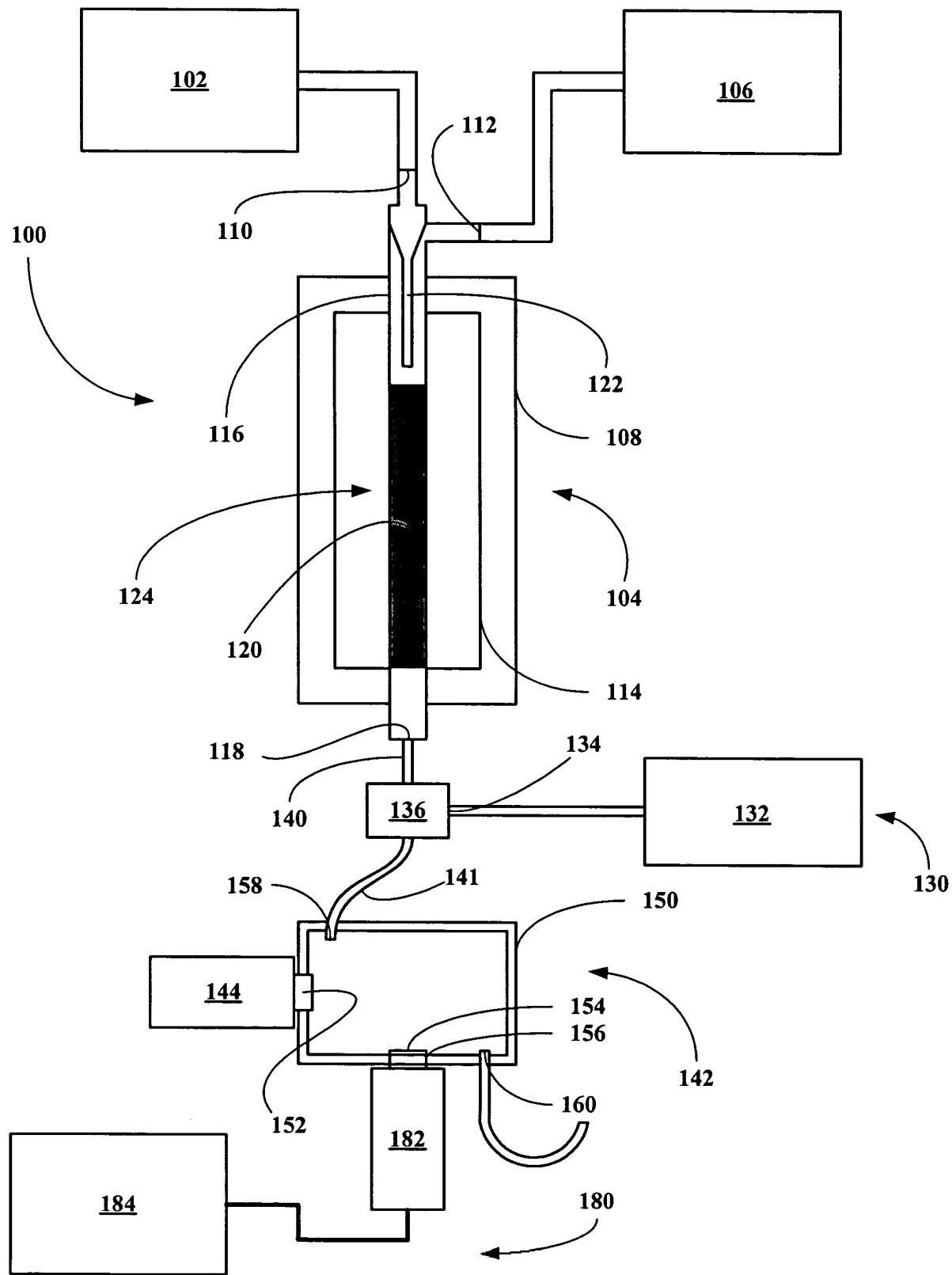


FIG. 1E

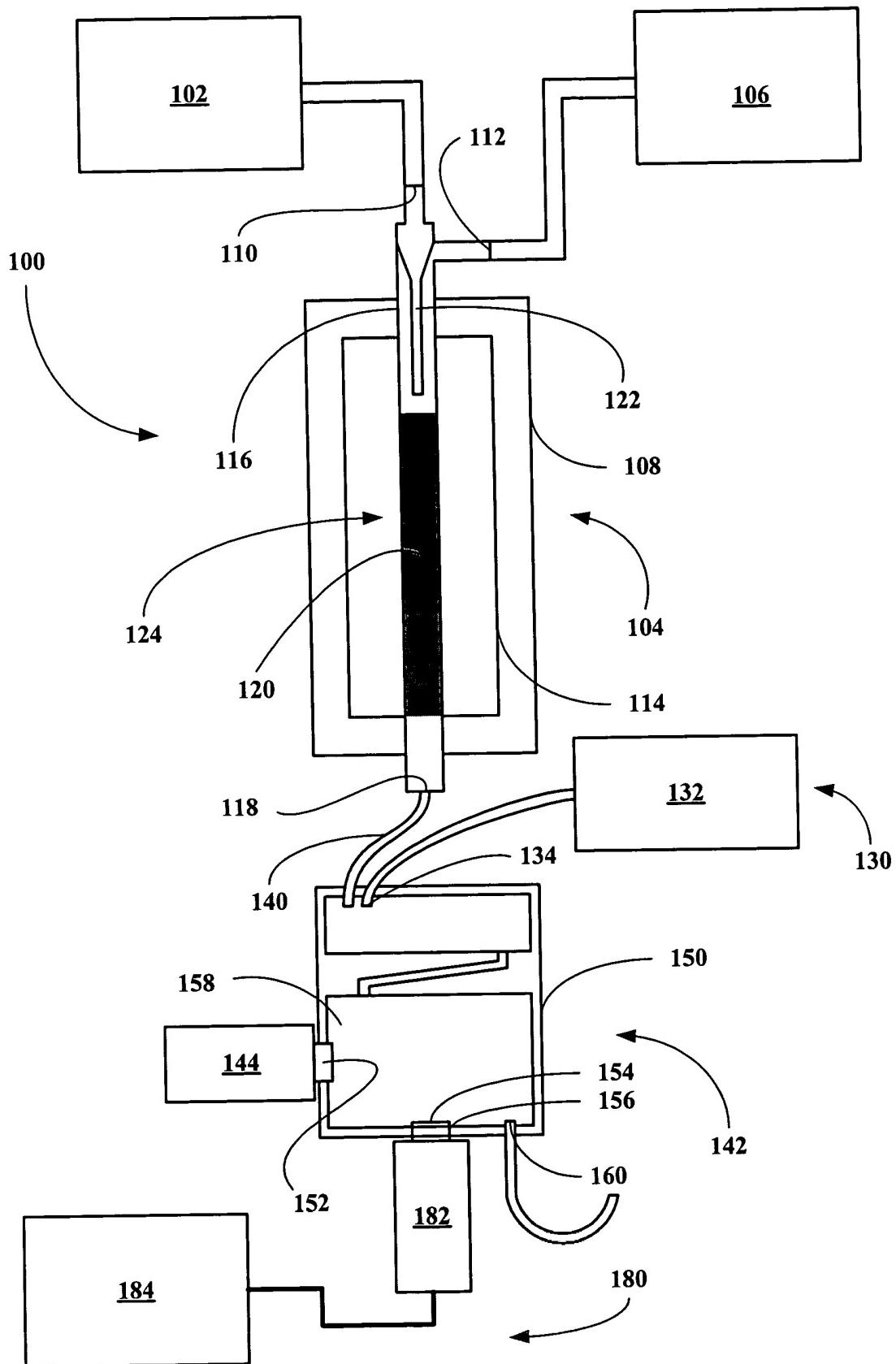


FIG. 1F

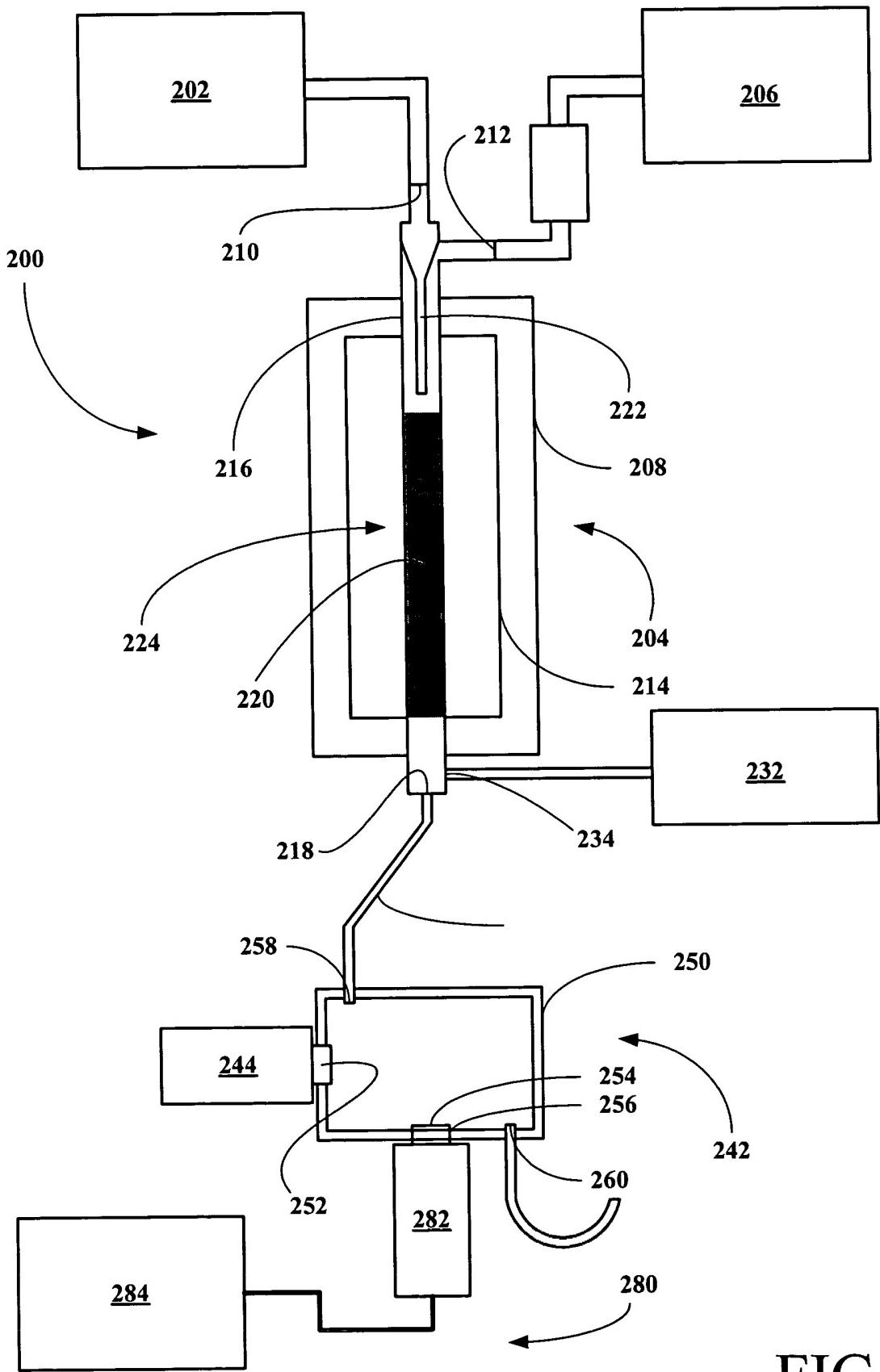


FIG. 2

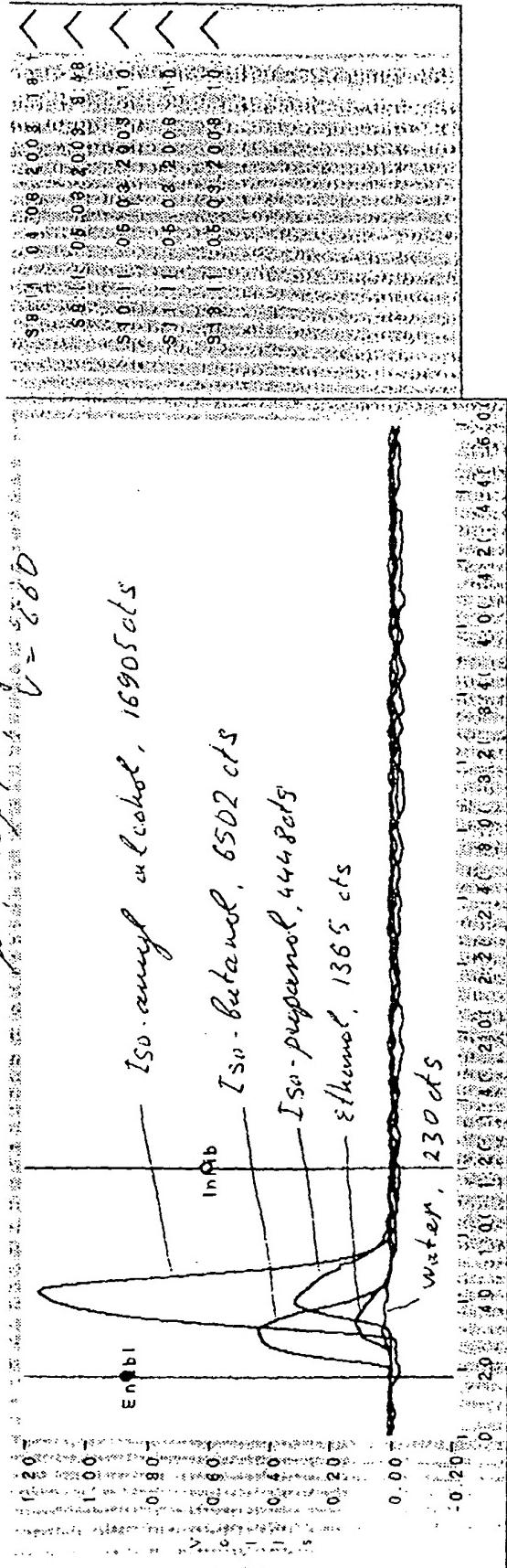
8/16

Alcohol "Blanks" vs. Response or "Background" Counts

Note: Customer Data

Injection Comparison Plot

$$\text{Slope } 2.2 \text{ cts/s} \quad T = 1075^\circ \text{ C}$$
$$Y = 2580$$



F1G.3

9/16

File Name: Soctrade.sam
 Curr. Cal. File: As2551.cal
 Orig. Cal. File: As2551.cal
 Calibration based on: Total Counts
 Blank Correction Is: OFF

Comments: Test UV Fluorescence Detector for Soctrade

Version: 3.7.7 6/28/02

Name	Use S	SConc	SCnts	S%RSD	Divider	Multiplier	Time	Date	OpID	Tray #	Vial Pos
1ppm <i>n</i> -C8	X	0.629	23742.3	1.19						1	1
1ppm <i>n</i> -C8.1	X	0.627	23690.0	1.00	1.00		2:13 PM	3/11/03	LJN		
1ppm <i>n</i> -C8.2	X	0.645	24202.4	1.00	1.00		2:19 PM	3/11/03	LJN		
1ppm <i>n</i> -C8.3	X	0.618	23430.0	1.00	1.00		2:25 PM	3/11/03	LJN		
1ppm <i>n</i> -C8.4	X	0.628	23729.2	1.00	1.00		2:31 PM	3/11/03	LJN		
1ppm <i>n</i> -C8.5	X	0.626	23660.1	1.00	1.00		2:37 PM	3/11/03	LJN		
Blank <i>n</i> -C8	X	-0.151	1485.7	15.40						1	1
Blank <i>n</i> -C8.1	X	-0.148	1561.1	1.00	1.00		2:44 PM	3/11/03	LJN		
Blank <i>n</i> -C8.2	X	-0.150	1512.4	1.00	1.00		2:50 PM	3/11/03	LJN		
Blank <i>n</i> -C8.3	X	-0.141	1768.8	1.00	1.00		2:56 PM	3/11/03	LJN		
Blank <i>n</i> -C8.4	X	-0.160	1214.1	1.00	1.00		3:02 PM	3/11/03	LJN		
Blank <i>n</i> -C8.5	X	-0.158	1272.2	1.00	1.00		3:08 PM	3/11/03	LJN		
500ppm N-DI	X	0.744	27020.0	NA	1.00	1.00	3:16 PM	3/11/03	LJN	1	1
i-C3OH	X	-0.173	852.5	NA	1.00	1.00	3:39 PM	3/11/03	LJN	1	1
Toluene	X	-0.120	2359.6	NA	1.00	1.00	4:15 PM	3/11/03	LJN	1	1
MeOH	X	-0.190	350.5	NA	1.00	1.00	4:48 PM	3/11/03	LJN	1	1

FIG. 4

10116

Blank i-C₈ Samples vs. N₂ Added to Injector Gas Flow

Injection Comparison Plot

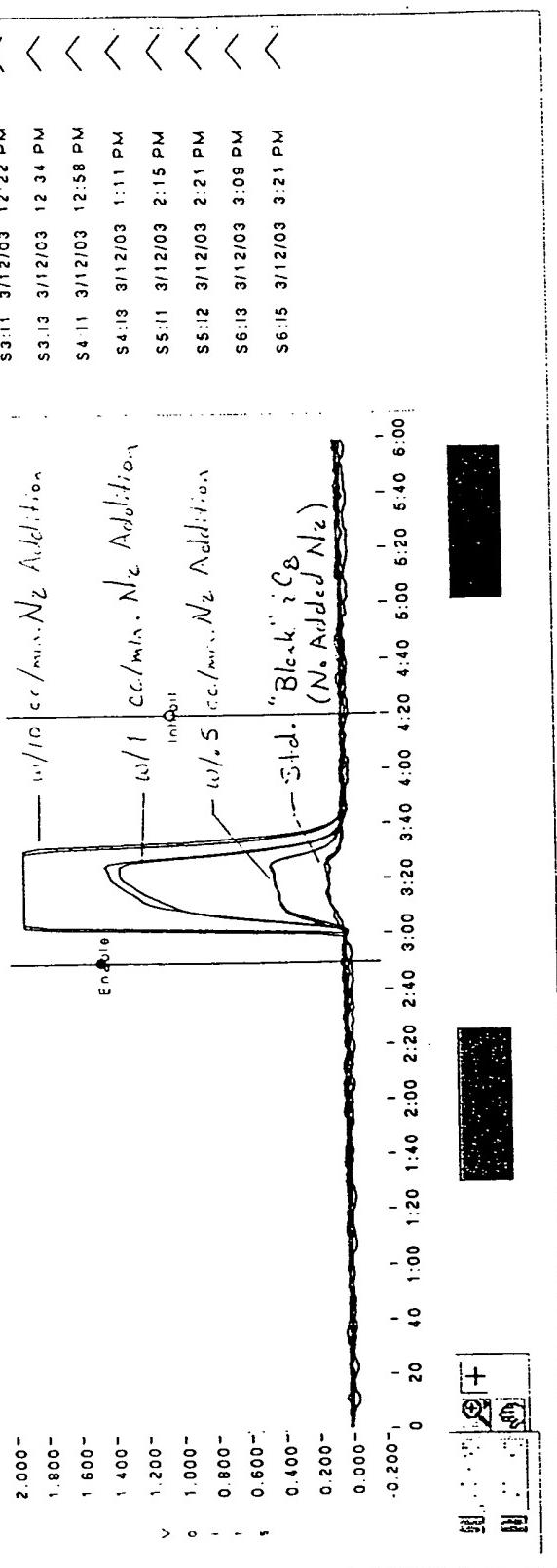


FIG. 5

11/16

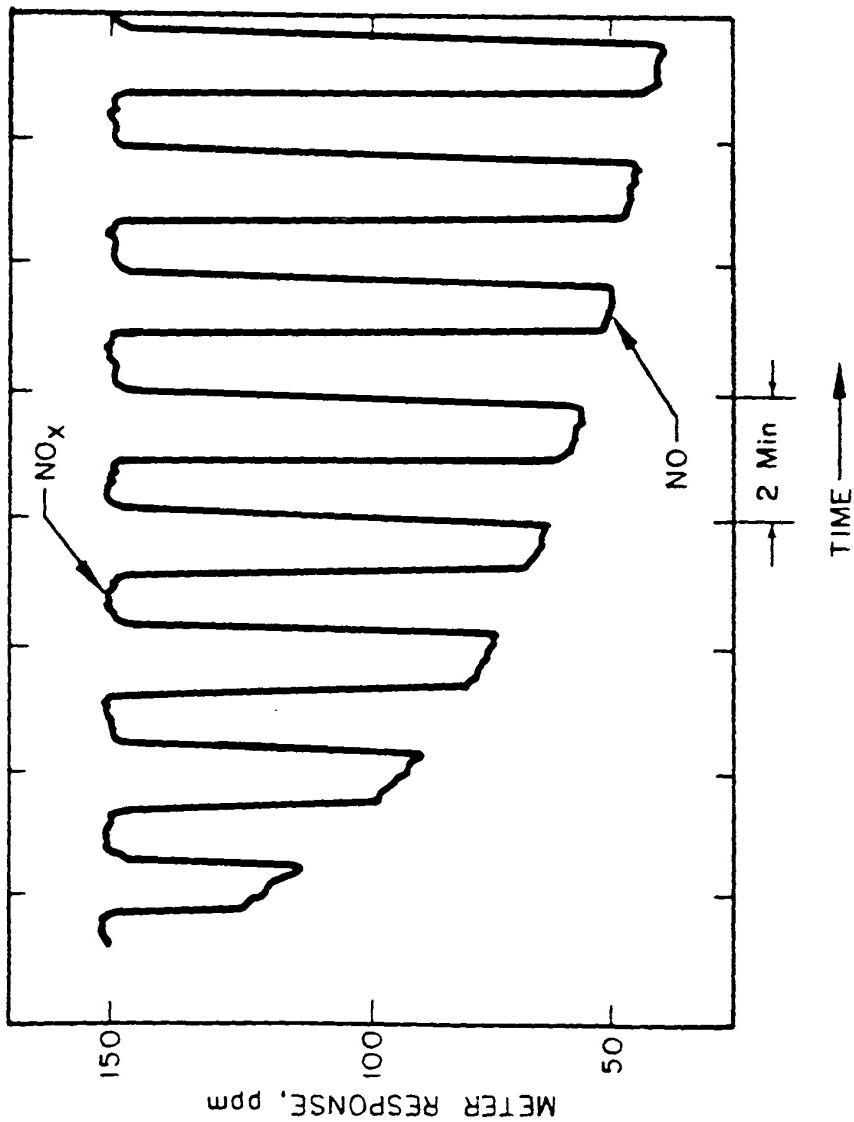


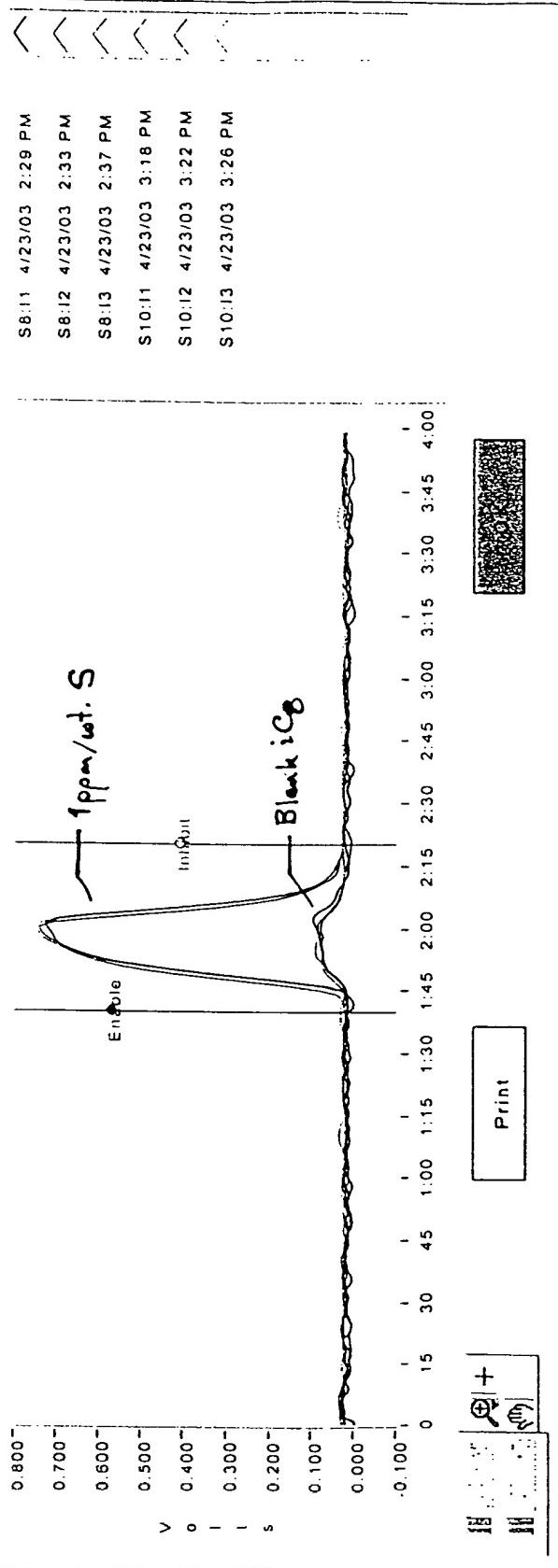
Fig. 6. Test of NO_2 converter efficiency. Monitor operated alternately in the NO_x and NO modes. The NO_x response remains constant with time, while that for NO decreases with time. From AeroChem. (38)

FIG. 6

12/16

Relative Response of "Blank" i-C₈ vs. 1ppm/lat. S in i-C₈ w/ Present UV Fluorescence Configuration

Injection Comparison Plot



Sample Size: 80 μ l
Injection Rate: 541/sec.

CombustionTube: Single Pass

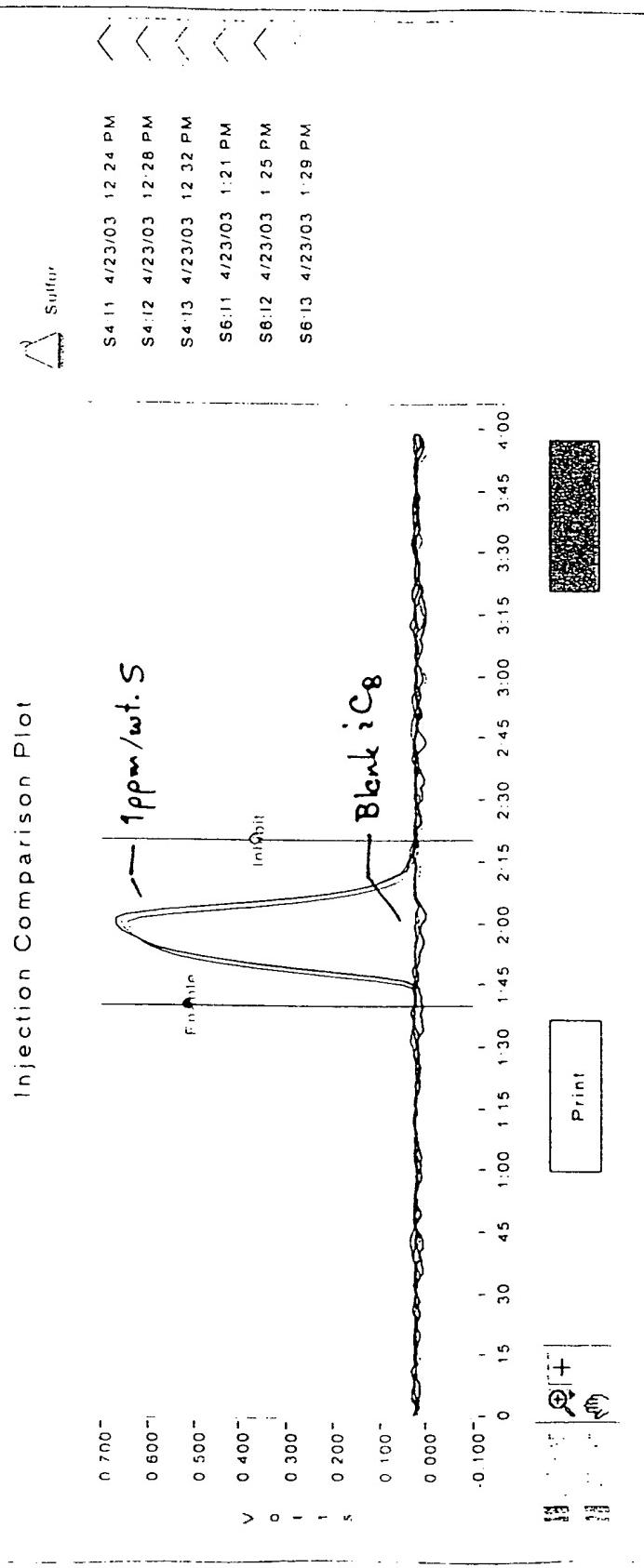
Combustion Gas Flows: MFC 2; O₂@500cc/min.
MFC 3; O₂@425cc/min.

PMT Voltage: -700vdc
Gain: High x 25

Fig. 7A

13116

Relative Response of "Blank i:C₈" vs. 1 ppm/wt. S in i:C₈ w/Ozone Addition



Analytical Conditions

Same as Figure 5a

(+) Ozone Addition @ Fluorescence Cell Inlet

FIG. 7B

14116

File Name: O3 addition.sam
 Curr. Cal. File: Interference.cal
 Orig. Cal. File: Interference.cal
 Calibration based on: Total Counts
 Blank Correction Is: OFF

Comments: All Ozone (O3) Addition = 1cc/min O2 with ATOMIC Prototype
 $(\text{Hv Transformer Primary} @ 7\text{vdc})$
 All 50ppbS standards in Fisher i-C8

Version: 3.7.7 6/28/02

Name	Use S	SConc	SCnts	SSDev	S%RSD		Divider	Multiplier	Time	Date
Reidel+O3	X	NaN	16.6	15.77	95.12					
Reidel+O3.1	X	Inf	37.6				1.00	1.00	11:08 AM	4/23/03
Reidel+O3.2	X	Inf	12.2				1.00	1.00	11:12 AM	4/23/03
Reidel+O3.3	X	Inf	28.1				1.00	1.00	11:16 AM	4/23/03
Reidel+O3.4	X	-Inf	0.9				1.00	1.00	11:20 AM	4/23/03
Reidel+O3.5	X	-Inf	4.2				1.00	1.00	11:24 AM	4/23/03
50ppb+O3	X	Inf	355.9	81.09	22.79					
50ppt+O3.1	X	Inf	429.9				1.00	1.00	11:29 AM	4/23/03
50ppb+O3.2	X	Inf	442.9				1.00	1.00	11:33 AM	4/23/03
50ppb+O3.3	X	Inf	287.1				1.00	1.00	11:37 AM	4/23/03
50ppb+O3.4	X	Inf	263.5				1.00	1.00	11:41 AM	4/23/03
50ppb+O3.5	X	Inf	355.9				1.00	1.00	11:45 AM	4/23/03
Reidel+O3	X	NaN	5.6	5.49	97.56					
Reidel+O3.1	X	-Inf	0.0				1.00	1.00	12:03 PM	4/23/03
Reidel+O3.2	X	-Inf	6.4				1.00	1.00	12:07 PM	4/23/03
Reidel+O3.3	X	-Inf	5.1				1.00	1.00	12:11 PM	4/23/03
Reidel+O3.4	X	-Inf	2.2				1.00	1.00	12:15 PM	4/23/03
Reidel+O3.5	X	Inf	14.4				1.00	1.00	12:19 PM	4/23/03
Fisher+O3	X	NaN	18.3	15.49	84.65					
Fisher+O3.1	X	Inf	28.6				1.00	1.00	12:24 PM	4/23/03
Fisher+O3.2	X	-Inf	4.3				1.00	1.00	12:28 PM	4/23/03

Fig. 8A

15 / 16

Name	Use S	SConc	SCnts	SSDev	S%RSD	Divider	Multiplier	Time	Date
Fisher+O3.3	x	-inf	0.0			1.00	1.00	12:32 PM	4/23/03
Fisher+O3.4	x	inf	35.6			1.00	1.00	12:36 PM	4/23/03
Fisher+O3.5	x	inf	23.0			1.00	1.00	12:40 PM	4/23/03
50ppb+O3	x	inf	352.9	46.42	13.16	1.00	1.00	12:45 PM	4/23/03
50ppb+O3.1	x	inf	313.8			1.00	1.00	12:49 PM	4/23/03
50ppb+O3.2	x	inf	317.1			1.00	1.00	12:53 PM	4/23/03
50ppb+O3.3	x	inf	337.3			1.00	1.00	12:57 PM	4/23/03
50ppb+O3.4	x	inf	370.6			1.00	1.00	1:01 PM	4/23/03
50ppb+O3.5	x	inf	425.4			1.00	1.00	1:01 PM	4/23/03
1ppm+O3	x	inf	9816.3	118.67	1.21				
1ppm+O3.1	x	inf	9657.6			1.00	1.00	1:21 PM	4/23/03
1ppm+O3.2	x	inf	9871.8			1.00	1.00	1:25 PM	4/23/03
1ppm+O3.3	x	inf	9761.8			1.00	1.00	1:29 PM	4/23/03
1ppm+O3.4	x	inf	9815.8			1.00	1.00	1:33 PM	4/23/03
1ppm+O3.5	x	inf	9974.7			1.00	1.00	1:37 PM	4/23/03
50ppb+O3	x	inf	332.7	71.52	21.50				
50ppb+O3.1	x	inf	245.3			1.00	1.00	1:43 PM	4/23/03
50ppb+O3.2	x	inf	363.7			1.00	1.00	1:47 PM	4/23/03
50ppb+O3.3	x	inf	270.8			1.00	1.00	1:51 PM	4/23/03
50ppb+O3.4	x	inf	414.5			1.00	1.00	1:55 PM	4/23/03
50ppb+O3.5	x	inf	369.2			1.00	1.00	1:59 PM	4/23/03
F-Nozone	x	inf	963.5	48.85	5.07				
F-Nozone 1	x	inf	960.1			1.00	1.00	2:29 PM	4/23/03
F-Nozone 2	x	inf	919.6			1.00	1.00	2:33 PM	4/23/03
F-Nozone 3	x	inf	917.3			1.00	1.00	2:37 PM	4/23/03
F-Nozone 4	x	inf	1033.7			1.00	1.00	2:41 PM	4/23/03
F-Nozone 5	x	inf	986.9			1.00	1.00	2:45 PM	4/23/03
50ppb Nozone	x	inf	1212.0	127.80	10.54				
Nozone 1	x	inf	1133.6			1.00	1.00	2:57 PM	4/23/03
Nozone 2	x	inf	1378.7			1.00	1.00	3:01 PM	4/23/03

Fig. 8 B

16/16

Name	User S	SCconc	SCount	SSDev	S%RSD	Divider	Multiplier	Time	Date
50ppb	X	Inf	1321.0			1.00	1.00	3:05 PM	4/23/03
Nozone_3	X	Inf	1107.7			1.00	1.00	3:09 PM	4/23/03
50ppb	X	Inf	1119.1			1.00	1.00	3:13 PM	4/23/03
Nozone_4	X	Inf	11311.0	83.00	0.73				
50ppb	X	Inf	11206.8			1.00	1.00	3:18 PM	4/23/03
Nozone_5	X	Inf	11363.2			1.00	1.00	3:22 PM	4/23/03
1ppm-Nozon	X	Inf	11306.4			1.00	1.00	3:26 PM	4/23/03
e_1	X	Inf	11260.6			1.00	1.00	3:30 PM	4/23/03
1ppm-Nozon	X	Inf	11417.8			1.00	1.00	3:34 PM	4/23/03
e_2									
e_3									
e_4									
e_5									

FIG. 8C